AMENDMENTS TO THE CLAIMS

1. (Previously Presented) An eye viewing device comprising:

a portable housing having an observer end and a patient end;

an illumination system at least partially disposed in said housing;

an imaging system at least partially disposed in said housing;

an image sensor generating image signals;

a processor system processing image information corresponding to image signals generated by said image sensor;

a module holder defined by said housing at said observer end; and

a replaceable module comprising at least said image sensor replaceably received in said holder.

2. (Original) The eye viewing device of claim 1, wherein said replaceable module further comprises said processor system.

3. (Original) The eye viewing device of claim 1, further comprising an electronic display in communication with said processor system.

4. (Previously Presented) The eye viewing device of claim 1, wherein said replaceable module further comprises a display in communication with said processor system.

5. (Previously Presented) The eye viewing device of claim 4, wherein said display is externally mounted on said module.

6. (Previously Presented) The eye viewing device of claim 4, wherein said display is externally mounted on a face of said module.

7. (Previously Presented) The eye viewing device of claim 4, wherein said display is rigidly mounted on said module.

8. (Previously Presented) The eye viewing device of claim 4, wherein said display is internally mounted in an interior of said module.

9. (Previously Presented) The eye viewing device of claim 4, wherein said display is mounted on a top of said housing.

10. (Previously Presented) The eye viewing device of claim 1, wherein said device includes a head worn display apparatus which includes a display.

11. (Previously Presented) The eye viewing device of claim 1, wherein said device includes a communication link component facilitating communication of image information externally from said housing.

12. (Previously Presented) The eye viewing device of claim 11, wherein said replaceable module further comprises said communication link.

13. (Previously Presented) The eye viewing device of claim 11, wherein said communication link includes a cable.

14. (Previously Presented) The eye viewing device of claim 11, wherein said communication link comprises a wireless communication link.

15. (Previously Presented) The eye viewing device of claim 11, wherein said communication link comprises a transportable memory structure.

16. (Original) The eye viewing device of claim 2, further comprising an electronic display.

17. (Previously Presented) The eye viewing device of claim 11, wherein said device further includes an electronic display spaced apart from said housing and said module, and in communication with said communication link.

18. (Previously Presented) The eye viewing device of claim 1, wherein said housing and said module include complementary mating electrical connectors which are adapted to mate when said module is received in said holder.

19. (Previously Presented) The eye viewing device of claim 18, wherein said processor system is incorporated in said housing and wherein said mating electrical connectors are adapted to provide breakable communication between said image sensor and said processor system.

20. (Previously Presented) The eye viewing device of claim 18, wherein said processor system is incorporated in said module, and wherein said device further includes a display mounted on said housing, wherein said mating electrical connectors provide breakable communication between said processor system and said display.

21. (Original) The device of claim 3, wherein said device includes a battery power supply incorporated in said housing, wherein said mating connectors proved breakable communication between an electronic component of said module and said power supply.

22. (Previously Presented) The device of claim 3, wherein said module further comprises a communication link component facilitating communication of image information externally from said housing.

Claims 23-45 (Previously Cancelled Without Prejudice or Disclaimer)

46. (Previously Presented) An eye viewing device system comprising:
a housing having an observer end and a patient end;
an illumination system at least partially disposed in said housing;
an imaging system at least partially disposed in said housing;
a module holder defined by said housing at said observer end; and
at least first and second replaceable modules, each replaceably receivable in said holder, said holder adapted to receive one of said modules at a given time,

wherein said first module comprises an eyepiece lens facilitating direct view of an eye structure and said second module comprises at least an image sensor generating image signals corresponding to an eye structure.

47. (Original) The system of claim 46, wherein said second module further comprises an electronic display.

48. (Original) The system of claim 46, wherein said second module further comprises a face mounted display.

49. (Original) The system of claim 46, wherein said second module further comprises an externally mounted display.

50. (Original) The system of claim 46, wherein said second module further comprises an electronic display mounted in an interior of said module.

51. (Original) The system of claim 46, further comprising a communication link component for facilitating communication of image information from said housing.

52. (Original) The system of claim 46, wherein said housing is a hand-held housing.

53. (Original) The system of claim 46, wherein said holder and said second module comprise complementary mating connectors.

54. (Previously Presented) The system of claim 46, wherein said illumination system projects a converging cone of light.

55. (Previously Presented) The system of claim 46, wherein said illumination system and said imaging system include a common objective lens.

56. (Previously Presented) The system of claim 46, wherein said illumination system projects a converging cone of light converging at an apex, and wherein said imaging system includes an aperture stop disposed to be substantially coaxial with respect to an imaging axis of said imaging system and substantially conjugate said apex.

57. (Previously Presented) The system of claim 46, wherein said imaging system includes an aperture stop, and wherein said eye viewing device includes an objective lens and an internal light source, wherein a surface of said objective lens closest to said light source is curved substantially concentric about a center of an aperture of said aperture stop, whereby internal glare in said device is reduced.

58. (Previously Presented) The system of claim 46, wherein said illumination system projects through a pupil, and wherein said imaging system includes an aperture disposed substantially coaxial about an imaging axis of said imaging system and substantially conjugate said pupil, when said illumination system projects substantially a maximum amount of light through said pupil.

59. (Previously Presented) The eye viewing device of claim 1, wherein said housing is hand held, and wherein said device is configured for viewing a retina.

60. (Previously Presented) The eye viewing device of claim 1, wherein said housing is hand held, wherein said device is configured for viewing a retina, and wherein said replaceable module further comprises said processor system.

61. (Previously Presented) The eye viewing device of claim 1, wherein said housing is hand held, wherein said device is configured for viewing a retina, wherein said replaceable module further comprises said processor system, and wherein said eye viewing device further includes an electronic display in communication with said processor system.

62. (Previously Presented) The eye viewing device of claim 1, wherein said housing is hand held, wherein said device is configured for viewing a retina, wherein said replaceable module further includes a display in communication with said processor system, and wherein said display is externally mounted on said replaceable module.

63. (Currently Amended) The eye viewing device of claim 1, wherein said housing [[~~his~~]] [[is]] hand held, wherein said device is configured for viewing a retina, wherein said replaceable module further includes a display in communication with said processor system, and wherein said display is externally mounted on a face of said module.

64. (Previously Presented) The eye viewing device of claim 1, wherein said housing is hand held, wherein said device is configured for viewing a retina, wherein said replaceable module further includes a display in communication with said processor system, and wherein said display is rigidly mounted on said module.

65. (Previously Presented) The eye viewing device of claim 1, wherein said housing is hand held, wherein said device is configured for viewing a retina, wherein said replaceable module further includes a display in communication with said processor system, and wherein said display is internally mounted in an interior of said module.

66. (Previously Presented) The eye viewing device of claim 1, wherein said housing is hand held, wherein said device is configured for viewing a retina, wherein said replaceable module further includes a display in communication with said processor system, and wherein said display is mounted on a top of said module.

67. (Previously Presented) The eye viewing device of claim 1, wherein said illumination system projects a converging cone of light.

68. (Previously Presented) The eye viewing device of claim 1, wherein said illumination system projects a converging cone of light converging at an apex, and wherein said imaging system includes an aperture stop disposed conjugate to said apex.

69. (Previously Presented) The eye viewing device of claim 2, wherein said imaging system includes an aperture stop disposed so that said aperture stop is substantially conjugate a pupil of a patient when said device is in an operative position.

70. (Previously Presented) The eye viewing device of claim 1, wherein said imaging system includes an aperture stop and an objective lens, and wherein said illumination system includes a light source, and wherein a surface of said objective lens closest said light source is curved substantially concentric about an aperture of said aperture stop.

71. (Previously Presented) A retinal viewing device system comprising:
a hand held housing having an observer end and a patient end;
an illumination system at least partially disposed in said housing;
an imaging system at least partially disposed in said housing;
a module holder defined by said housing at said observer end; and
at least first and second replaceable modules, each replaceably receivable in said holder, said holder adapted to receive one of said modules at a given time, wherein said first module comprises an eyepiece lens facilitating direct view of an eye structure and said second module comprises at least an image sensor for generating image signals corresponding to an eye structure.

72. (Previously Presented) The system of claim 71, wherein said second module further comprises an electronic display.

73. (Previously Presented) The system of claim 71, wherein said second module further comprises a face mounted display.

74. (Previously Presented) The system of claim 71, wherein said second module further comprises an externally mounted display.

75. (Previously Presented) The system of claim 71, wherein said second module further comprises an electronic display mounted in an interior of said module.

76. (Previously Presented) The system of claim 71, further comprising a communication link component for facilitating communication of image information from said housing.

77. (Previously Presented) The system of claim 71, wherein said illumination system includes a light generating light source, wherein said housing includes a first part extending coextensively with an imaging axis of said imaging system, and a second part extending transverse to said first part, and wherein said light generating light source is disposed in said second part.

78. (Previously Presented) The system of claim 71, wherein said holder and said second module comprise complementary mating connectors.

79. (Previously Presented) The system of claim 71, wherein said illumination system projects a converging cone of light.

80. (Previously Presented) The system of claim 71, wherein said illumination system and said imaging system include a common objective lens.

81. (Previously Presented) The system of claim 71, wherein said illumination system projects a converging cone of light converging at an apex, and wherein said imaging system includes an aperture stop disposed to be substantially coaxial with respect to an imaging axis of said imaging system and substantially conjugate said apex.

82. (Previously Presented) The system of claim 71, wherein said imaging system includes an aperture stop, and wherein said eye viewing device includes an objective lens and an internal light source, wherein a surface of said objective lens closest to said light source is curved substantially concentric about a center of an aperture of said aperture stop, whereby internal glare in said device is reduced.

83. (Previously Presented) The system of claim 71, wherein said illumination system projects light through a pupil, and wherein said imaging system includes an aperture disposed substantially coaxial about an imaging axis of said imaging system and substantially conjugate said pupil, when said eye viewing device is in an operative position.

Claims 84-99 (Previously Cancelled Without Prejudice or Disclaimer)

100. (Previously Presented) A hand held retina viewing device comprising:

a housing;

an image sensor generating image signals;

an imaging system including an imaging axis;

an illumination system projecting a converging cone of light converging at an apex and diverging thereafter; and

a moving mirror disposed in said housing moveable between a first position at which a retinal image focal plane is defined at an active surface of said image sensor and a second position permitting visual viewing of said retina,

wherein said imaging system further includes an aperture stop disposed in said housing substantially conjugate to said apex.

101. (Previously Presented) The device of claim 100, further including a holder receiving a replaceable module, and wherein said moving mirror is incorporated in a replaceable module replaceably received in said holder.

102. (Previously Presented) The eye viewing device of claim 100, wherein an aperture stop is sized to substantially correspond to a size of a pupil.

103. (Currently Amended) The eye viewing device of claim 100, wherein an aperture of said aperture stop is sized substantially according to the formula $d=2\cdot m$ millimeters where d is a diameter of the aperture and m is the magnification of said pupil in a plane of [[~~a~~]] [[an]] aperture stop.

104. (Previously Presented) The eye viewing device of claim 100, wherein said illumination system includes a light source positioned off-axis with respect to said imaging axis, whereby internal and corneal glare in said device is reduced.

105. (Previously Presented) The eye viewing device of claim 104, wherein said off-axis positioned light source is a light generating light source.

106. (Previously Presented) The eye viewing device of claim 104, wherein said off-axis positioned light source is provided by a light reflective element.

107. (Previously Presented) The eye viewing device of claim 100, wherein said imaging system includes an objective lens and said illumination system includes a light source, said objective lens having a first surface closest to said light source curved substantially concentric about a center of an aperture of said aperture stop, whereby internal glare in said device is reduced.

108. (Previously Presented) The eye viewing device of claim 100, wherein said illumination system includes a light source positioned outside of a border between received and blocked light defined by said aperture stop, whereby said light source has no obscuring effect on images received by said viewing device.

109. (Previously Presented) The eye viewing device of claim 100, wherein said illumination system includes a light source positioned outside of a border between received and blocked light defined by said aperture stop and wherein said imaging

system includes an objective lens having a curved first surface curved concentric about a center of an aperture of said aperture stop, whereby said light source has no obscuring effect on images received by said viewing device, and whereby incident light reflected from said first surface is blocked by said aperture stop.

110. (Previously Presented) The eye viewing device of claim 100, wherein said device is devoid of a beam splitter.

111. (Previously Presented) The eye viewing device of claim 100, wherein a retinal field of view of said imaging system is larger than a retinal area of illumination of said illumination system.

112. (Previously Presented) The eye viewing device of claim 100, wherein a retinal field of view of said imaging system is between about 15 to 30 percent larger than a retinal area of illumination of said illumination system.

113. (Previously Presented) The eye viewing device of claim 100, wherein said aperture stop is disposed in said device so that said aperture stop is substantially conjugate to said pupil when said illumination system projects substantially a maximum amount of light through said pupil.

114. (Previously Presented) The eye viewing device of claim 100, wherein said imaging system includes an objective lens disposed in a path of illumination light rays generated by said illumination system.

115. (Previously Presented) The eye viewing device of claim 100, wherein said illumination system includes an objective lens disposed so that said imaging axis intersects said objective lens.

Claims 116-131 (Previously Cancelled Without Prejudice or Disclaimer)

132. (Currently Amended) A hand held retina viewing device comprising:

a housing;

an image sensor generating image signals;

an imaging system including an imaging axis;

an illumination system projecting a converging cone of light converging at an apex and diverging thereafter;

wherein said imaging system further includes an aperture stop disposed in said housing substantially conjugate to said apex[[,]][[;]]and

wherein said retina viewing device is configured to facilitate both visual viewing of said retina and electronic image capturing of an image representing said retina.

133. (Previously Presented) The retina viewing device of claim 132, further including a holder receiving a replaceable module, and wherein said device includes a beam splitter incorporated in said replaceable module.

134. (Previously Presented) The retina viewing device of claim 132, wherein said illumination system includes a mirror, a light generating light source, and a condenser lens converging light from said light generating light source to a point on said mirror.

135. (Previously Presented) The retina viewing device of claim 132, wherein an aperture of said aperture stop is sized substantially according to the formula $d=2\cdot m$ millimeters where d is a diameter of the aperture and m is the magnification of a pupil in a plane of said aperture stop when said device is in an operative position.

136. (Previously Presented) The retina viewing device of claim 132, wherein said imaging system includes an objective lens and said illumination system includes a light source, said objective lens having a curved first surface closest to said light source curved substantially concentric about a center of an aperture of said aperture stop, whereby internal glare in said device is reduced.

137. (Previously Presented) The retina viewing device of claim 132, wherein said illumination system includes a light source positioned outside of a border between received and blocked light defined by said aperture stop and wherein said imaging system includes an objective lens having a curved first surface closest to said light source curved concentric about a center of an aperture of said aperture stop, whereby said light source has no obscuring effect on images received by said retina viewing device, and whereby incident light reflected from said first surface is blocked by said aperture stop.

Claims 138-150 (Previously Cancelled Without Prejudice Or Disclaimer)

151 (Currently Amended) The retina viewing device of claim 132, wherein said retina viewing device further includes a holder and first and second replaceable modules, wherein said holder is adapted to receive one of said modules at a given time, wherein said first module comprises ~~and~~ an eyepiece lens facilitating direct view of said retina and said second module comprises at least an image sensor for generating image signals corresponding to said retina.

152. (Previously Presented) The retina viewing device of claim 132, wherein said eye viewing device includes an image sensor generating image signals and a moving mirror disposed in said housing moveable between a first position at which a retinal image focal plane is defined at an active surface of said image sensor and a second position permitting visual viewing of said retina.

153. (Currently Amended) The retina viewing device of claim 152, further including holder, and a replaceable module replaceably received in said ~~module~~ holder, wherein said moving mirror is disposed in said module.

154. (Previously Presented) The retina viewing device of claim 132, wherein said retina viewing device includes an image sensor generating image signals and a beam splitter generating a first retinal image focal plane to facilitate direct viewing of

said retina and a second retinal image focal plane, said second retinal image focal plane being generated at said image sensor.

155. (Currently Amended) The retina viewing device of claim 154, further including holder, and a ~~module~~ replaceable module replaceably received in said ~~module~~ holder, wherein said ~~moving mirror~~ beam splitter is disposed in said module.

156. (Currently Amended) A hand held retina viewing device for viewing a retina of an eye having a pupil, said hand held retina viewing device comprising:

an illumination system for illuminating said retina;

an imaging system having an imaging axis, wherein said illumination system and said imaging system include a common objective lens;

an aperture stop disposed in said device substantially coaxial with said imaging axis, wherein an operative position of said device is achieved when said aperture stop is positioned substantially conjugate to said pupil, and wherein said illumination system includes a light source positioned off-axis with respect to said imaging axis so that internal and corneal glare in said device is reduced[[,]][[;]]and

wherein said eye viewing device is configured to facilitate both visual viewing of said retina and electronic image capturing of an image representing said retina.

157. (Previously Presented) The retina viewing device of claim 156, wherein an aperture of said aperture stop is sized to substantially correspond to a size of said pupil.

158. (Previously Presented) The retina viewing device of claim 156, wherein said light source is provided by a light reflecting mirror.

159. (Previously Presented) The retina viewing device of claim 156, wherein said imaging system includes an objective lens, said objective lens having a first surface closest to said light source curved substantially concentric about a center of an aperture of said aperture stop, whereby internal glare in said device is reduced.

160. (Previously Presented) The retina viewing device of claim 156, wherein said off-axis positioned light source is positioned outside of an aperture of said aperture stop, whereby said light source has no obscuring effect on images received by said viewing device.

161. (Previously Presented) The retina viewing device of claim 156, wherein said off-axis positioned light source is positioned outside of a border between received and blocked light defined by said aperture stop and wherein said imaging system includes an objective lens having a curved first surface curved concentric about a center of said aperture stop, whereby said light source has no obscuring effect on images received by said viewing device, and whereby incident light reflected from said first surface is blocked by said aperture stop.

162. (Previously Presented) The retina viewing device of claim 156, wherein a retinal field of view of said imaging system is larger than a retinal area of illumination of said illumination system.

163. (Previously Presented) The retina viewing device of claim 156, wherein a retinal field of view of said imaging system is between about 15 to 30 percent larger than a retinal area of illumination of said illumination system.

164. (Currently Amended) The retina viewing device of claim 156, wherein said retina viewing device further includes a holder and first and second replaceable modules, wherein said holder is adapted to receive one of said modules at a given time, wherein said first module comprises ~~and~~ an eyepiece lens facilitating direct view of said retina and said second module comprises at least an image sensor for generating image signals corresponding to said retina.

165. (Previously Presented) The retina viewing device of claim 156, wherein said eye viewing device includes an image sensor generating image signals and a moving mirror disposed in said housing moveable between a first position at which a

retinal image focal plane is defined at an active surface of said image sensor and a second position permitting visual viewing of said retina.

166. (Currently Amended) The retina viewing device of claim 165, further including holder, and a replaceable module replaceably received in said ~~module~~ holder, wherein said moving mirror is disposed in said module.

167. (Previously Presented) The retina viewing device of claim 156, wherein said retina viewing device includes an image sensor generating image signals and a beam splitter generating a first retinal image focal plane to facilitate direct viewing of said retina and a second retinal image focal plane, said second retinal image focal plane being generated at said image sensor.

168. (Currently Amended) The retina viewing device of claim 167, further including holder, and a ~~module~~ replaceable module replaceably received in said ~~module~~ holder, wherein said ~~moving mirror~~ beam splitter is disposed in said module.